

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2001-NM-306-AD; Amendment 39-13298; AD 2003-18-07]

RIN 2120-AA64

Airworthiness Directives; Aerospatiale Model ATR42-200, -300, -320, and -500 Series Airplanes; and Model ATR72 Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment supersedes an existing airworthiness directive (AD), applicable to all Aerospatiale Model ATR42-200, -300, -320, and -500 series airplanes; and all Model ATR72 series airplanes; that currently requires revising the Airplane Flight Manual (AFM) to modify procedures for calculating takeoff performance when Type II or IV de-icing or anti-icing fluids have been used. This amendment requires revising the existing AFM revision to correct the performance values for Model ATR-72 series airplanes and to provide an additional method of compliance for all airplanes. This amendment is prompted by issuance of mandatory continuing airworthiness information by a civil aviation authority. The actions specified by this AD are intended to ensure that the flightcrew is advised of the potential effects of Type II or IV de-icing or anti-icing fluids on the airplane's performance during takeoff, and to ensure that the flightcrew is advised of the revised performance calculations for takeoff to address these effects.

DATES: Effective October 15, 2003.

ADDRESSES: Information pertaining to this amendment may be examined at the Federal Aviation Administration (FAA), Transport Airplane Directorate, Rules Docket, 1601 Lind Avenue, SW., Renton, Washington.

FOR FURTHER INFORMATION CONTACT: Gary Lium, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 227-1112; fax (425) 227-1149.

SUPPLEMENTARY INFORMATION: A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) by superseding AD 2001-16-10, amendment 39-12379 (66 FR 44032, August 22, 2001), which is applicable to all Aerospatiale Model ATR42-200, -300, -320, and -500 series airplanes; and all Model ATR72 series airplanes; was published in the Federal Register on February 24, 2003 (68 FR 8555). The action proposed to require revising the Airplane Flight Manual (AFM) to modify procedures for calculating takeoff performance when Type II or IV de-icing or anti-icing fluids have been used.

Comments

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the comments received from a single commenter.

Request To Change Paragraph (b)

The commenter does not agree that the follow-on procedures for Type II or Type IV de-icing fluid use, as specified in paragraph (b) of the proposed rule, are adequate. The commenter states that using these types of fluid on the subject airplanes can cause higher-than-normal stick forces during rotation. The commenter notes that a lightly loaded ATR airplane typically has a rotation speed of under 100 knots, and due to the shearing dynamics of the de-icing fluid, there may be fluid on the tail during rotation. The commenter adds that it objects to the solutions for these problems, as specified in the proposed rule and recommended by the airplane manufacturer and the Direction Générale de l'Aviation Civile (which is the airworthiness authority for France). The commenter states that Compliance Method Number 1 would result in a flightcrew aborting the takeoff after V1 (takeoff decision speed), which negates the procedures the flightcrews have been trained to use and would seriously jeopardize safety of flight. The commenter adds that Compliance Method Number 2 should be used only in a dire emergency, because both crew members should not be manipulating the controls during a critical phase of flight, such as takeoff.

The FAA does not agree that a potential unsafe condition could occur should an operator choose to use Compliance Method Number 1. This compliance method necessitates an increase in required runway length in order to provide the necessary margins in a case of late rotation or an aborted takeoff after V1. This should not be interpreted as a reconsideration of the concept of V1 as a decision speed, or as an incentive to abort takeoff after V1. Flightcrews should be trained to continue the takeoff after V1, even in the case of increased pitch control forces. However, despite published procedures and training, the possibility that a flightcrew would consider the pitch control forces so high that takeoff is impossible, and decide to abort the takeoff after V1, cannot be excluded. In such a case, the AFM procedures specified in this final rule would provide an additional margin for accelerate-stop distance.

In addition, we do not agree that implementation of Compliance Method Number 2 would cause an unsafe condition. The use of this procedure would include a mandatory pre-takeoff briefing between the flightcrew members regarding the need for assistance in rotating the airplane if necessary. Thus, the co-pilot would be prepared for such a request should the pilot decide to ask for assistance. No change to the final rule is necessary in this regard.

The commenter previously requested an alternative method of compliance (AMOC) for AD 2001-16-10, amendment 39-12379. (The requirements of that AD are restated in paragraph (a) of the proposed rule.) After receiving the AMOC, the commenter implemented new training procedures for its flightcrews to teach them to anticipate the additional stick forces that may be required when using Type II or Type IV de-icing fluid. The training procedures have been added to the training manuals and training curriculum, and the commenter notes that following those procedures is safer than following those specified in the proposed rule. The commenter does not make a specific request; however, we infer that the commenter wants its procedures to be used by all operators.

Although the commenter has an FAA-approved AMOC allowing the use of other training procedures, we do not agree that those training procedures can be used by all operators. Since 1991, there have been five incidents of aborted takeoff after V1 following the use of Type II or Type IV de-icing fluid. Analysis of in-service experience has shown that following inadequate procedures for the use and application of Type II and Type IV de-icing fluids could lead to high control forces during rotation. If combined with the lack of flightcrew awareness or insufficient training, high control forces could result in delayed rotation and significantly lower rotation rates, and in some cases, the decision of the flightcrew to abort the takeoff after V1. We evaluate flightcrew training on a case-by-case basis, therefore, we cannot allow all operators to use the suggested training procedures, as these AMOCs are issued after validation of supporting technical data submitted by the operator. However, we have added a new paragraph (d)(2) to this final rule to specify that AMOCs approved for AD 2001-16-10 are approved for compliance with the requirements of this AD.

Conclusion

After careful review of the available data, including the comments noted above, the FAA has determined that air safety and the public interest require the adoption of the rule with the change previously described. The FAA has determined that this change will neither increase the economic burden on any operator nor increase the scope of the AD.

Changes to 14 CFR Part 39/Effect on the AD

On July 10, 2002, the FAA issued a new version of 14 CFR part 39 (67 FR 47997, July 22, 2002), which governs the FAA's airworthiness directives system. The regulation now includes material that relates to altered products, special flight permits, and alternative methods of compliance (AMOCs). Because we have now included this material in part 39, only the office authorized to approve AMOCs is identified in each individual AD. However, for clarity and consistency in this final rule, we have retained the language of the NPRM regarding that material.

Change to Labor Rate Estimate

We have reviewed the figures we have used over the past several years to calculate AD costs to operators. To account for various inflationary costs in the airline industry, we find it necessary to increase the labor rate used in these calculations from \$60 per work hour to \$65 per work hour. The cost impact information, below, reflects this increase in the specified hourly labor rate.

Cost Impact

There are approximately 159 airplanes of U.S. registry that will be affected by this AD.

The AFM revision currently required by AD 2001-16-10 takes approximately 1 work hour per airplane to accomplish, at an average labor rate of \$65 per work hour. Based on these figures, the cost impact of the currently required revision of the AFM on U.S. operators is estimated to be \$10,335, or \$65 per airplane.

The new AFM revision that is required in this AD action takes approximately 1 work hour per airplane to accomplish, at an average labor rate of \$65 per work hour. Based on these figures, the cost impact of the new requirements of this AD on U.S. operators is estimated to be \$10,335, or \$65 per airplane.

The cost impact figures discussed above are based on assumptions that no operator has yet accomplished any of the requirements of this AD action, and that no operator would accomplish those actions in the future if this AD were not adopted. The cost impact figures discussed in AD rulemaking actions represent only the time necessary to perform the specific actions actually required by the AD. These figures typically do not include incidental costs, such as the time required to gain access and close up, planning time, or time necessitated by other administrative actions.

Regulatory Impact

The regulations adopted herein will not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, it is determined that this final rule does not have federalism implications under Executive Order 13132.

For the reasons discussed above, I certify that this action (1) is not a "significant regulatory action" under Executive Order 12866; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and (3) will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A final evaluation has been prepared for this action and it is contained in the Rules Docket. A copy of it may be obtained from the Rules Docket at the location provided under the caption ADDRESSES.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Safety.

Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

PART 39—AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. Section 39.13 is amended by removing amendment 39-12379 (66 FR 44032, August 22, 2001), and by adding a new airworthiness directive (AD), amendment 39-13298, to read as follows:

AIRWORTHINESS DIRECTIVE



Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

We post ADs on the internet at "www.faa.gov"

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

2003-18-07 Aerospatiale: Amendment 39-13298. Docket 2001-NM-306-AD. Supersedes AD 2001-16-10, Amendment 39-12379.

Applicability: All Model ATR42-200, -300, -320, and -500 series airplanes; and all Model ATR72 series airplanes; certificated in any category.

Compliance: Required as indicated, unless accomplished previously.

To ensure that the flightcrew is advised of the potential effects of Type II or IV de-icing or anti-icing fluids on the airplane's performance during takeoff, and to ensure that the flightcrew is advised of the revised performance calculations for takeoff to address these effects, accomplish the following:

Restatement of Requirements of AD 2001-16-10

Revision of the Airplane Flight Manual (AFM)

(a) Within 15 days after September 26, 2001 (the effective date of AD 2001-16-10, amendment 39-12379), revise the Appendices and Supplements chapter of the AFM by including either the following manufacturer's Appendix "Takeoff after use of Fluid Type II or IV" or a copy of this AD in the AFM.

"Takeoff after use of fluid Type II or IV"

This appendix applies only to aircraft de-iced or anti-iced before takeoff, using fluid Type II or IV.

These types of fluid may lead to an increase in control forces necessary to rotate, and then to a modification of takeoff performance.

Therefore, this flight manual must be modified as follows:

1. General

The general information in section 1 is applicable.

2. Limitations

The limitations in section 2 are applicable.

3. Normal Procedures

The normal procedures in section 3 are applicable.

4. Emergency Procedures

The emergency procedures in section 4 are applicable.

5. Procedures Following Failures

The procedures following failures in section 5 are applicable.

6. Performances

The performances in section 6 for dry runways and in section 7.03 for non-dry runways (advisory materials) are applicable with the addition of the following for takeoff computations:

- Determine VR for the lowest available V2,
- Assume $V1=VR$,
- Increase TOR, TOD, ASD by 20%.

7. Appendices and Supplements

Data of Section 7 are applicable by adding what follows:

For the dispatch cases:

- Apply takeoff penalties due to the system failure,
- Then apply takeoff penalties due to the use of fluids Type II or IV.

Dispatch is not authorized in the following cases:

- Takeoff with flaps retracted."

New Requirements of This AD

AFM Revision: Model ATR 42-200, -300, -320, and -500 Series Airplanes

(b) For Model ATR 42-200, -300, -320, and -500 series airplanes: Within 15 days after the effective date of this AD, revise the Appendices and Supplements chapter of the AFM by removing the AFM revision required by paragraph (a) of this AD and inserting the following procedures in the AFM (this may be accomplished by inserting a copy of this AD into the AFM):

"Takeoff after use of fluid Type II or IV

This appendix applies only to aircraft de-iced or anti-iced before takeoff, using fluid Type II or IV.

These types of fluid may lead to an increase in control forces necessary to rotate, and then to a modification of takeoff performance.

Therefore, this flight manual must be modified as follows:

Compliance Method Number 1

1. General

The general information in Section 1 is applicable.

2. Limitations

The limitations in Section 2 are applicable.

3. Normal Procedures

The normal procedures in Section 3 are applicable.

4. Emergency Procedures

The emergency procedures in Section 4 are applicable.

5. Procedures Following Failures

The procedures following failures in Section 5 are applicable.

6. Performances

The performances in Section 6 for dry runways and in Section 7.03 for non-dry runways (advisory materials) are applicable with the addition of the following for takeoff computations:

- Determine VR for the lowest available V2,
- Assume $V1=VR$,
- Increase TOR, TOD, ASD by 20%.

7. Appendices and Supplements

Data of Section 7 are applicable by adding what follows:

For the dispatch cases:

- Apply takeoff penalties due to the system failure,
- Then apply takeoff penalties due to the use of fluid Type II or IV.

Dispatch is not authorized in the following cases:

- Ferry flight with pitch elevators disconnected,
- Take-off with flaps retracted.

Compliance Method Number 2

Crew Training Required

1. General

The general information in Section 1 is applicable.

2. Limitations

The limitations in Section 2 are applicable.

3. Normal Procedures

The normal procedures in Section 3 are applicable with the addition of the following:

The Captain must be the pilot flying and the pre-takeoff briefing must include the following takeoff procedure (refer to point 5).

4. Emergency Procedures

The emergency procedures in Section 4 are applicable.

5. Procedures Following Failures

The procedures following failures in Section 5 are applicable with the addition of the following:
Takeoff Sequence

In case of difficulties to rotate, the Captain (CPT) should request the non-flying pilot's (NFP's) assistance. In that case, on CPT order, NFP pulls the control column until 5[deg] pitch attitude is reached, then NFP releases the controls.

Performances

The performances in Section 6 for dry runways and in Section 7.03 for non-dry runways (advisory materials) are applicable with the addition of the following for takeoff computations:

Increase TOD by 70 m for ATR 42-300.

Increase TOD by 80 m for ATR-42-400/-500.

6. Appendices and Supplements

Data of Section 7 are applicable with the addition of the following:

For the dispatch cases:

- Apply takeoff penalties due to the system failure,
- Then apply takeoff penalties due to the use of fluid Type II or IV.

Dispatch is not authorized in the following cases:

- Ferry flight with pitch elevators disconnected,
- Take-off with flaps retracted.

AFM Revision: Model ATR 72 Series Airplanes

(c) For Model ATR 72 series airplanes: Within 15 days after the effective date of this AD, revise the Appendices and Supplements chapter of the AFM by removing the AFM revision required by paragraph (a) of this AD and inserting the following procedures in the AFM (this may be accomplished by inserting a copy of this AD into the AFM):

"Takeoff after use of fluid Type II or IV

This appendix applies only to aircraft de-iced or anti-iced before takeoff, using fluid Type II or IV.

These types of fluid may lead to an increase in control forces necessary to rotate, and then to a modification of takeoff performance.

Therefore, this flight manual must be modified as follows:

Compliance Method Number 1

Crew Training Required

1. General

The general information in Section 1 is applicable.

2. Limitations

The limitations in Section 2 are applicable.

3. Normal Procedures

The normal procedures in Section 3 are applicable.

4. Emergency Procedures

The emergency procedures in Section 4 are applicable.

5. Procedures Following Failures

The procedures following failures in Section 5 are applicable.

6. Performances

The performances in Section 6 for dry runways and in Section 7.03 for non-dry runways (advisory materials) are applicable with the addition of the following for takeoff computations:

- Determine VR for the lowest available V2,
- Assume V1=VR,
- Increase TOR, TOD, ASD by 25%.

7. Appendices and Supplements

Data of Section 7 are applicable by adding what follows:

For the dispatch cases:

- Apply takeoff penalties due to the system failure,
- Then apply takeoff penalties due to the use of fluid Type II or IV.

Dispatch is not authorized in the following cases:

- Ferry flight with pitch elevators disconnected,
- Take-off with flaps retracted.

Compliance Method Number 2

Crew Training Required

1. General

The general information in Section 1 is applicable.

2. Limitations

The limitations in Section 2 are applicable.

3. Normal Procedures

The normal procedures in Section 3 are applicable with the addition of the following:

The Captain must be the pilot flying and the pre-takeoff briefing must include the following takeoff procedure (refer to point 5).

4. Emergency Procedures

The emergency procedures in Section 4 are applicable.

5. Procedures Following Failures

The procedures following failures in Section 5 are applicable with the addition of the following:

Takeoff Sequence

In case of difficulties to rotate, the Captain (CPT) should request the non-flying pilot's (NFP's) assistance. In that case, on CPT order, NFP pulls the control column until 5[deg] pitch attitude is reached, then NFP releases the controls.

Performances

The performances in Section 6 for dry runways and in Section 7.03 for non-dry runways (advisory materials) are applicable with the addition of the following for takeoff computations:

Increase TOD by 70 m.

6. Appendices and Supplements

Data of Section 7 are applicable with the addition of the following:

For the dispatch cases:

- Apply takeoff penalties due to the system failure,
- Then apply takeoff penalties due to the use of fluid Type II or IV.

Dispatch is not authorized in the following cases:

- Ferry flight with pitch elevators disconnected,
- Take-off with flaps retracted.

Alternative Methods of Compliance

(d)(1) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, International Branch, ANM-116, Transport Airplane Directorate, FAA. Operators shall submit their requests through an appropriate FAA Principal Operations Inspector, who may add comments and then send it to the Manager, International Branch, ANM-116.

(2) Alternative methods of compliance, approved previously per AD 2001-16-10, amendment 39-12379, are approved as alternative methods of compliance with this AD.

Note 1: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the International Branch, ANM-116.

Special Flight Permits

(e) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be accomplished.

Note 2: The subject of this AD is addressed in French airworthiness directives 2000-448-053(B) R2 and 2000-449-082(B) R2, both dated September 19, 2001.

Effective Date

(f) This amendment becomes effective on October 15, 2003.

Issued in Renton, Washington, on August 29, 2003.

Vi L. Lipski,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 03-22703 Filed 9-9-03; 8:45 am]

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